Translated from German by SCIENTIFIC TRANSLATION SERVICES 411 Wyntre Lea Dr. Bryn Mawr, PA 19010

EP 1 249 219 A1 [claims only]

Patent Claims

- 1. Process for manufacturing moldings, especially capsules, made of a biopolymeric material, especially based on starch, in which at least one endless material belt (15) is extruded from an extrusion tool (13) and is processed into moldings (11) in a die (2) with inclusion of a filling material at plasticization temperature, whereby the material belt is subject to at least one heat treatment at a treatment station (3) between the extrusion tool and the die for the relief of stresses.
- 2. Process in accordance with claim 1, characterized in that at least two material belts are processed into moldings according to the Rotary Die Principle, whereby both material belts are subject to at least one heat treatment at a treatment station between the extrusion and the processing into moldings.
- 3. Process in accordance with one of the claims 1 or 2, characterized in that the heat treatment is carried out by means of radiation from a radiation source, especially by means of IR radiation.
- 4. Process in accordance with one of the claims 1 or 2, characterized in that the heat treatment is carried out by convection heat.
- 5. Process in accordance with one of the claims 1 or 2, characterized in that the heat treatment is carried out by immersing the material belt or the material belts in at least one heated bath, especially an oil bath.
- 6. Process in accordance with claim 5, characterized in that the bath temperature is maintained in a range of 40°C to 130°C.
- 7. Process in accordance with one of the claims 1 through 6, **characterized in that** the tensile stress of the material belt or of the material belts is kept constant with a compensating means and especially by means of at least one compensating roller (21).
- 8. Device for manufacturing moldings, especially capsules, made of a biopolymeric material, especially based on starch, with at least one extrusion tool (13) for extruding an endless belt of material (15) and with at least one die (12) for processing the material belt into moldings (11) with the inclusion of a filling material, whereby at least one treatment station (3) for impacting the material belt with heat is arranged between the extrusion tool and the die.
- 9. Device in accordance with claim 8, characterized in that the treatment station for impacting the material belt with heat contains a radiation source, especially a radiation source emitting IR radiation.
- 10. Device in accordance with one of the claims 8 or 9, characterized in that the treatment station has at least one heating element for impacting the material belt with heat.

- 11. Device in accordance with one of the claims 8 through 10, characterized in that the treatment station for impacting the material belt with heat has a heatable bath, especially an oil bath.
- 12. Device in accordance with claim 11, characterized in that at least one stripping device for stripping liquid, especially for metering the coating with liquid, is arranged between the bath and the die.
- 13. Device in accordance with one of the claims 8 through 12, characterized in that it has at least one compensating means, especially a compensating roller, for the maintenance of a constant tensile stress at the material belt.
- 14. Device especially in accordance with one of the claims 8 through 13, characterized in that it has at least one adjustable positioning unit, on which the extrusion tool and the die can be adjusted in relation to one another with regard to their relative position.
- 15. Device in accordance with one of the claims 8 through 14, characterized in that the die (2) is a Rotary Die device with two grooved rolls and one fitter wedge, and that at least one extrusion tool is arranged on each side of the die in such a way that the material belt is fed into the die on a feed plane without lateral deflection.
- 16. Use of an oil bath for relieving material belts made of a biopolymeric material, especially based on starch.